# Collaboration Tools for the GAN

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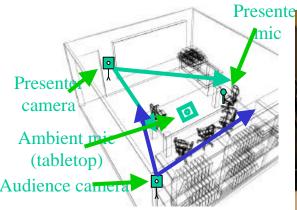
## **Collaboration Technologies**

- Access to
  - People
  - Instruments
  - Stored information
- Synchronous vs asynchronous
  - Chat, video conferencing, audio streaming
  - Shared objects of conversation (like data)
  - Threaded discussions
  - Electronic notebooks
- Transitions between them

- Meeting support
  - Remote presentations
  - Shared applications/whiteboards
  - Annotation capabilities
  - Natural audio
  - Video of all
  - Easy setup
  - Captured for replay
  - Back channels

# **Access Grid Nodes (ANL)**

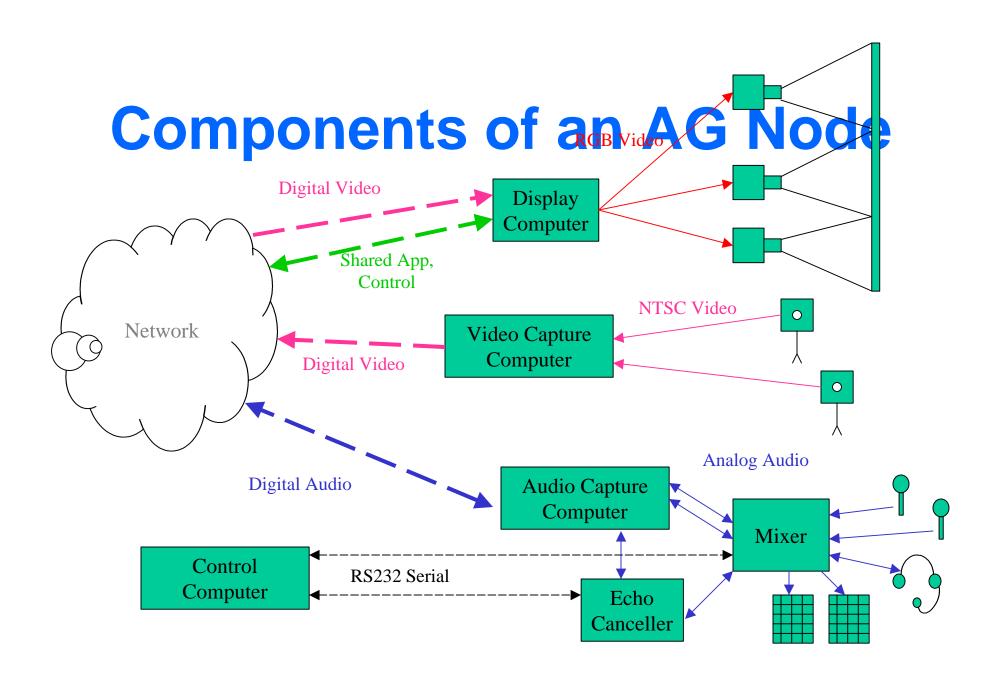












#### **VRVS**

#### Documentations

# Applications user guides









**RAT 3 RAT 4** 















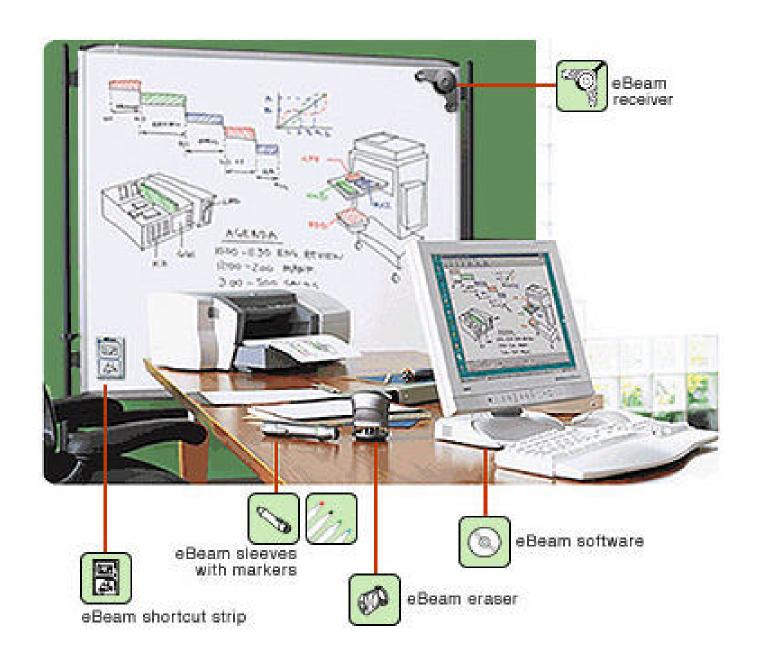


**VNC** 

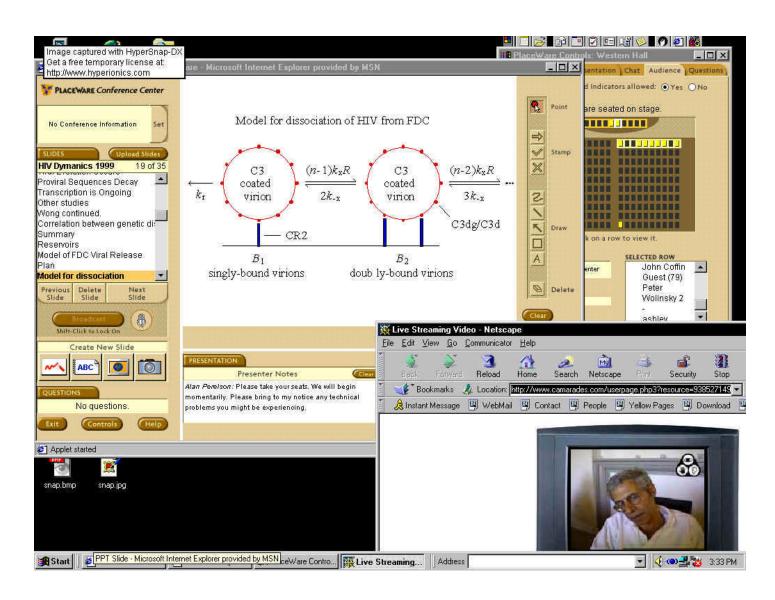
**VNC Proxy** 



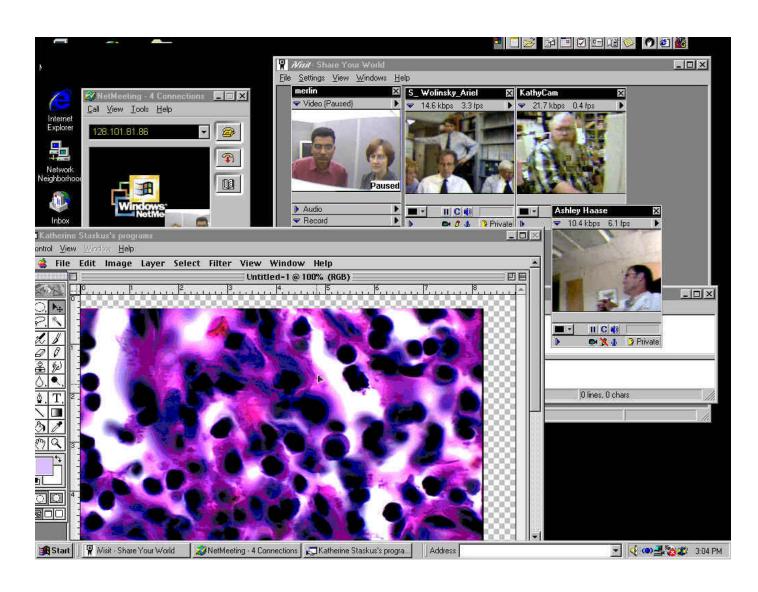
**Camera Control** 



#### **Great Lakes CFAR: Virtual Seminar**

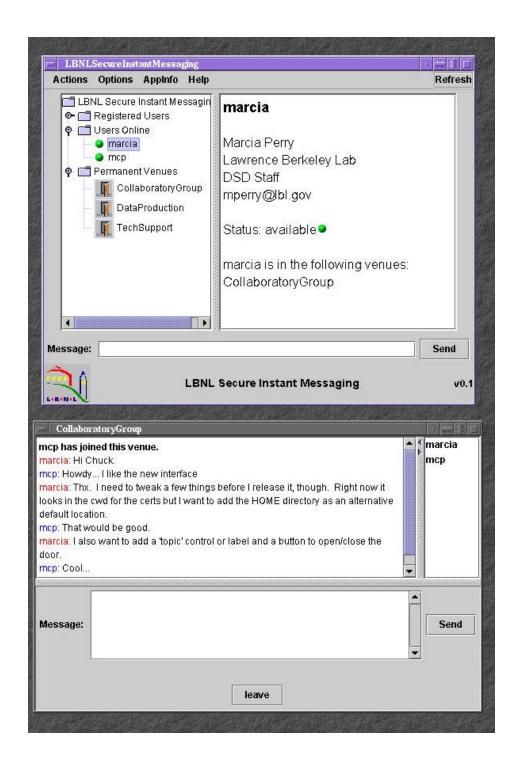


#### **Great Lakes CFAR: Virtual Lab Meeting**

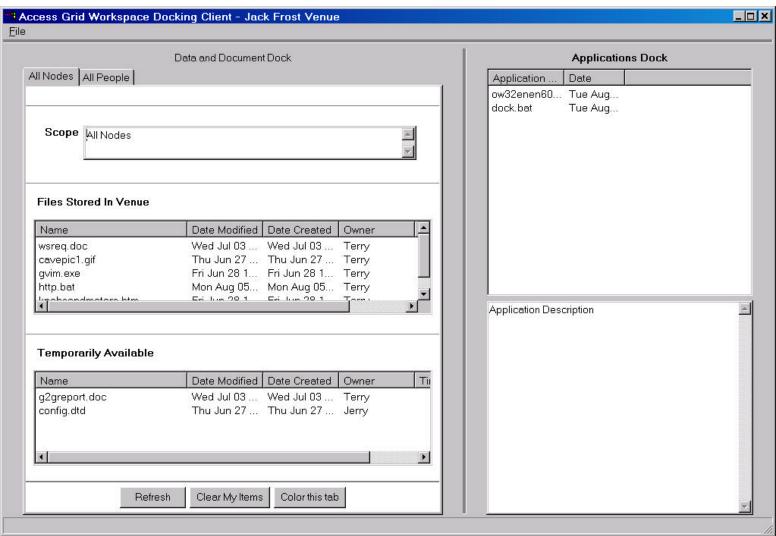


- Informal meetings
  - Awareness, calendars for finding people
    - With appropriate sensitivities
  - Desktop meeting support
  - Discussion support
  - Messaging support
  - Shared whiteboards

# Secure Messaging (LBNL)

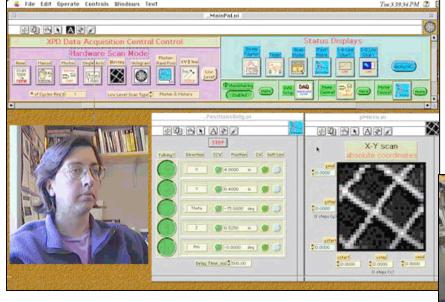


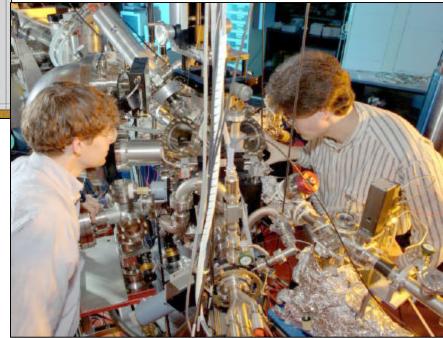
# Workstation Docking/File Sharing (ANL/LBNL)



- Remote operations
  - Observation of panel, instruments, people
  - Discussion
  - Remote control of some parameters
    - Instrumentation
    - Data collection
    - Not the beam
  - Auditory communication for operator
    - Nearby video stream

Spectro-Microscopy
Collaboratory





## **Asynchronous Conversation**

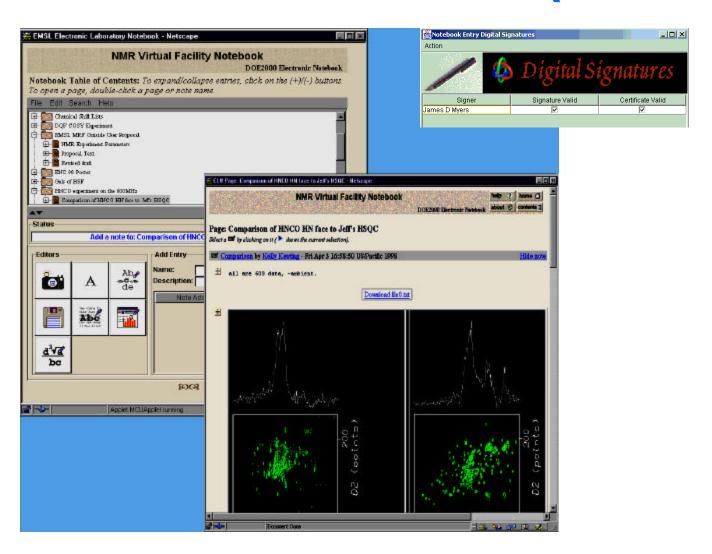
- Email
- Voicemail
- Video/audio capture and replay
- Chat archive
- Threaded discussion

# Asynchronous object sharing

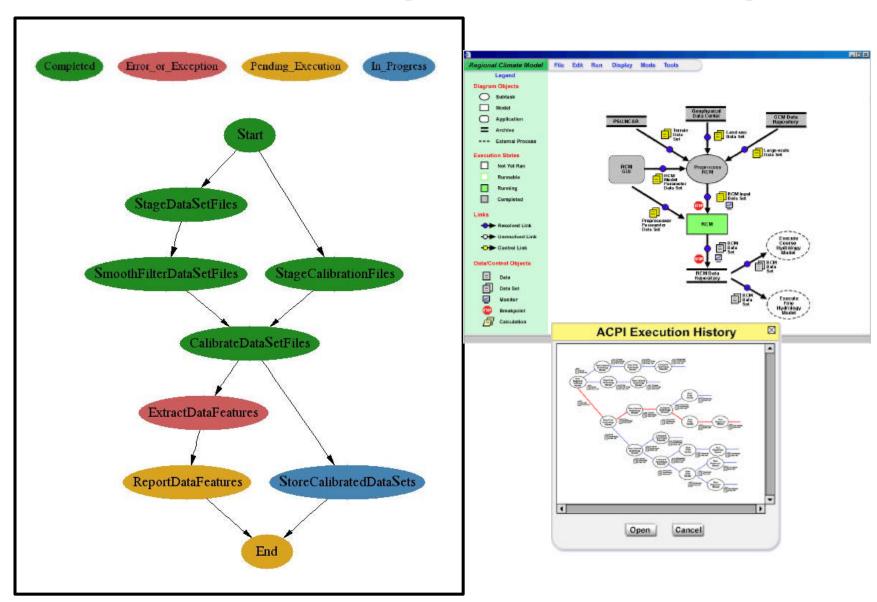
- Shared file space
- Data-stream capture
- Annotation/comment
- Search/Index/Metadata
- Shared authoring (editing handoff)
- Audit trail
- Change control
- Customizable views

- Asynchoronous communication
  - Electronic notebook
    - Agendas
    - Open issues
    - Notes
  - Annotated capture of meetings
  - Annotated documents and data displays
  - Project management/workflow tracking

#### **Electronic Notebook (PNNL)**



# Workflow (LBNL,PNNL)



# **Security**

- Public Key Infrastructure
  - Grid Security Infrastructure
- Kerberos
- Virtual Private Network
- Username/password

#### **Features**

- Identification
- Access Control/Authorization
- Guests
- Privacy
- Vulnerabilities
- Ease of use

#### Social issues

- Privacy
- Reciprocity
- Ease of use
- Agreed "rules of the road"
- Culture
- Adoption
- Training

#### **URLs**

#### **DOE National Collaboratories Program**

http://doecollaboratory.pnl.gov/

**Access Grid - ANL** 

http://www.accessgrid.org

**VRVS** 

http://www.vrvs.org

**EMSL - PNNL** 

http://collaboratory.emsl.pnl.gov/docs/collab/index.html

#### **LBNL Collaboration Technologies**

http://www-itg.lbl.gov/Collaboratories/

#### E-Beam

http://www.e-beam.com

#### **VNC**

http://www.uk.research.att.com/vnc/